

A.P. Statistics
Assignment 6-2

Remember to show your thinking through your work.

1. Describe the difference between a discrete random variable and a continuous random variable.

2. As we study random variables, the idea of z-scores will come up again. What is a z-score (in words) and what is the formula for finding a z-score?

3. Consider a uniform distribution created by a random number generator. The distribution looks like a square with a length of 1 and a height of 1. The random number generator creates any number between 0 and 1. Find the following probabilities:

a. $P(0 \leq X \leq 0.4)$

b. $P(0.4 \leq X \leq 1)$

c. $P(X > 0.6)$

d. $P(X \geq 0.6)$

e. $P(0.23 < X < 0.76)$

4. It is known that heights (X) at a local school follow a normal distribution with a mean of 68 inches and a standard deviation of 2.7 inches.

a. Find $P(X < 65)$

b. Find $P(X > 72)$

c. Find $P(60 < x < 72)$

d. How tall would you need to be to be among the tallest 5% of people in the school?